Abstract

     This invention is to provide a parallel efficiency calculation method, which can be applied, even in a case where a load balance is not kept, to many parallel processings including a heterogeneous computer system environment, and quantitatively correlates a parallel efficiency with a load balance contribution ratio and a virtual parallelization ratio, as parallel performance evaluation indexes, and parallel performance impediment factor contribution ratios. A parallel efficiency $E_p(p)$ is calculated by using a load balance contribution ratio Rb(p) representing a load balance degree between respective processors included in a parallel computer system, a virtual parallelization ratio Rp(p) representing a ratio, with respect to time, of a portion calculated in parallel by the respective processors to processings executed in the parallel computer system, and a parallel performance impediment factor contribution ratio Rj(p) representing a ratio of a processing time of a portion of each parallel performance impediment factor to a total processing time of all the processors included in the parallel computer system as follows:

$$E_p(p) = R_b(p) \cdot \frac{1}{R_p(p)} \cdot \left(1 - \sum_{j=1}^{j_{Others}} R_j(p)\right) \quad (4-4)$$

J is the parallel performance impediment factor number.